

Angular 5 with Typescript, HTML, CSS

Overview

Introduction to Angular training covers everything you need to know to get started with this next generation of the Angular framework. Angular (version 4 and above using TypeScript) makes the creation of single page applications even easier than before. In this course developers will learn to use Angular Directives and to create Angular Components and Services to develop applications based on the Model-View-Controller (MVC) architecture. You will learn to use HTML Templates to define views and to connect views with code using output, two-way, event and property bindings. The course reviews the benefits and challenges of Single Page Applications and how to overcome those challenges using the Angular Router. The course also covers everything you need to know about TypeScript - a programming language based on JavaScript that is used to create Angular applications.

Learning Objectives

In this training, attendees will learn how to:

- ❖ Basics of HTML, Javascript, NPM, Node and other build tools and dependency management.
- ❖ Create single page web applications using the MVC pattern of Angular.
- ❖ Understand how to write and organize Angular code.
- ❖ Program Angular View Components and Services.
- ❖ Use Angular output, two-way, event and property bindings.
- ❖ Exchange data with network servers using the Angular HTTP Client.
- ❖ Work with Angular Pipes to format data. Create and work with Angular Forms.
- ❖ Angular Component Router.

Prerequisites

JavaScript OOP basics (constructor pattern, inheritance, polymorphism, this object). ES6 – class, extend, arrow function, import. TypeScript is identical to ES6, but has few more important features such as Interface, Type system & Decorators.

Typescript Introduction Course Content

Introduction

In this module, we will learn what typescript is and what the benefits of typescript are over other scripting languages. We can also learn how to install and setup the environment and how we can create our first example using typescript.

- What is TypeScript?
- Benefits of TypeScript:
- Setup the Environment
- First TypeScript Example

Data Types and Variables

In this module, we will learn what the datatypes that are used in typescript are, and we will introduce a new data type let.o Basic Data Types

- Arrays
- Tuples
- Enum
- Any and void
- null and undefined
- Type Inference
- Type Casting
- Difference between let and var
- Const declaration

Destructuring & Spread

In this module, we will learn how to extract the data from objects and arrays in a convenient way using destructuring and we can learn how to break arrays and objects into components using spreads.

- Array Destructuring
- Object Destructuring
- Mixed Destructuring
- Property renaming
- Default Values
- Spreads

Working with Classes

In this module, we will learn how to write classes and how to create objects for our classes like we do in other programming languages like Java, C# etc. And we can also learn how we can fulfill OOPS concepts using typescript.

- o Writing and Using Classes

- Constructor method
- Inheritance of classes
- Typecasting
- Type Assertion
- Static Properties
- Abstract class

Working with Interfaces

In this module, we will learn how to work with interfaces in typescript.

- o Interface Declaration and Initialization with an object.

- Duck Typing
- Interface Implementation by class
- Interface having Optional Property
- Class extending another class and also implementing an Interface
- Excess Property Checks
- Indexable Types
- Extending Interfaces

Generics

In this module, we will learn what are generics, when to use them and how to create generics using typescript. And its wide range of usage over all the OOPS concepts.

- o When to Use Generic Functions

- Generic Types
- Generic Interface
- Generic Classes
- Generic Constraints
- Using Type Parameters in Generic Constraint

Modules and Namespaces

In this module, we will learn how to export and import between module. And how can we group the required modules into a namespace

- Export Syntax
- Import Syntax
- Re-export
- Default exports
- Using require()
- Declaring and Using Namespaces

Angular5 Course Content

Introduction

In this module, we will learn what is angular, what are the major differences between Angular 1.X, Angular 2 and Angular 4. We will also learn how to set up in the local environment and a small introduction to typescript.

- What is Angular?
- Angular (**vs**) Angular2 (**vs**) Angular4 (**vs**) Angular5
- Setup for local environment

Directives

In this module, we will learn what the built-in directives that we mostly use in angular4, and usage of Host Listener and Host Binding. Also, we can learn how to create attribute directives.

- Structural directives (Built-in Directives (**ngIf**, **ngFor**, **ngSwitch**))
- Style and Class Directives (**ngClass**, **ngStyle**)
- Attribute directives
- Host Listener and Host Binding

Data binding

In this module, we will learn how to do data-binding in angular4, and how we can make use of @input and @output decorators.

- Property binding and Interpolation
- Event binding
- Two-way Binding
- Use of **@Input** and **@Output**

Components

In this module, we will learn one of the major concept in angular4 i.e., components. And we can also learn how to create a dynamic component using **ngComponentOutlet**.

- What are components?
- Understanding Components **lifecycle hooks**
- Creating and using components
- Dynamic components using **ngComponentOutlet**

Modules

In this module, we will learn what modules are, and usage of modules in a different manner. We can also learn what **AOT** compilation is.

- Root App module
- Ahead-Of-Time(AOT) Compilation
- Feature modules
- Lazy Loading a Module
- Shared Module

Forms

In this module, we will learn two different types of creating forms in angular4 i.e. template driven and model-driven. And we will also learn how to do validations and how to create custom validators.

- Template Driven Forms
- Model Driven & Reactive Forms
- Form with **@ViewChild**
- Validations
- Resetting & submitting forms
- Custom Valuators

Pipes

In this module we will learn what pipes are, and how to pass parameters to pipes, and how to create custom pipes.

And we will also learn new concept **Async pipes** that is introduced in angular4.

- Why pipes are useful?
- Parameterizing pipes
- Custom pipes

- Pure and Impure pipes
- Async pipes

Services & Dependency injection

In this module we will learn what are services and how do they communicate using HTTP protocol to the server.

And we will also learn about very interesting topic Dependency Injection in angular.

- Creating Service
- Logger Service
- \$http Service
- Injectors
- Providers
- Tokens
- DI in Angular Framework

Routing

In this module, we will learn the introduction for routing in angular and how to navigate between views, how to do parameterized routing.

- Introduction
- Configuring & Navigating
- Parameterized routes

Crud Operations Using Http Service

In this module we will create an application with an end-to-end start from the server to client, getting response and requests using HTTP service.

- Creating Services
- Creating Components
- Creating Routings
- Configuring NgModule
- Run the application

At the end of the course, participants will be able to Create/develop Angular applications for all devices.

TECHNO EXPERT SOLUTIONS

AN INSTITUTE FOR SPECIALIZED STUDIES

